and LAKININA, N. K.

"The Effect of Barbamyl (amytal sodium), Nembutal (pentobarbital sodium) and Thiopental Sodium on the Higher Nervous Activity of Rabbits."

report presented at the 763rd meeting of the Pharmacology and Toxicology Section of the I. M. Sechenov Leningrad Society of Physiologists, Biochemists and Pharmacologists, 28 Mar. 1958.

Institute of Physiology, AN SSSR I. P. Pavlov

(Farmakologiia i Toksikologiia, 21, no 6, Nov-Dec 58, p. 620)

SOFRONOV, N.S.; TSOBKALLO, G.I.

Changes in the higher nervous activity of dogs following the chronic administration of amobarbital. Trudy Inst.fiziol. 8: 433-440 '59. (MIRA 13:5)

1. Laboratoriya farmakologii tsentral'noy nervnoy sistemy (zaveduyushchiy - G.I, Tsobkallo) Instituta fiziologii im. I.P. Pavlova AN SSSR.

(AMOBARBITAL) (CONDITIONED RESPONSE)

TSOBKALLO, G.I.; KALININA, M.K.

Effect of barbamyl, nembutal, and thiopental on the higher nervous activity in rabbits. Zhur. vys. nerv. deiat 10 no. 4:605-612 Jl-Ag '60. (MIRA 14:2)

1. Group of Experimental Pharmacology, Pavlov Institute of Physiology, U.S.S.R. Academy of Sciences, Koltushi.
(BARBITUARATES) (CONDITIONED RESPONSE)

TSOBKALLO, G.I.; KALININA, M.K.

Effect of barbiturates on the higher nervous activity in rabbits during hypnosis. Zhur. vys. nerv. deiat. 11 no.1:157-164 Ja-F '61. (MIRA 14:5)

1. Laboratory of Pharmacology of Central Nervous System, Pavlov Institute of Physiology, U.S.S.R. Academy of Sciences, Leningrad.
(CONDITIONED RESPONSE) (BARBITURATES)
(HYPNOTISM)

TSOBKALLO, G.I.; BOLONDINSKIY, V.K.

Effect of aminazine on the motility of neural processes in dogs. Farm. i toks. 27 no.4:387-390 Jl-Ag '64. (MIRA 17:11)

1. Laboratoriya neyrofarmakologii (zav. - prof. G.I. Tsobkallo) i laboratoriya kortiko-vistseral'noy fiziologii i patologii (zav. - prof. I.T. Kurtsin) Instituta fiziologii imeni Pavlova AN SSSR, Leningrad.

KALININA, M.K.; TSOBKALLO, G.I.

Effect of caffeine on higher nervous activity in rabbits.
Trudy Inst. fiziol. 10:35-40 '62 (MIRA 17:3)

1. Laboratoriya farmakologii tsentral'noy nervnoy sistemy (zav. - G.I.TSobkallo) Instituta fiziologii imeni Pavlova AN SSSR.

KUCHERENKO, T.M.; TSOBKALLO, G.I.

Changes in higher nervous activity caused by p-aminobenzoic acid and novocaine during the administration of sulfanilamide. Zhur.vys.nerv.deiat. 13 no.2:276-279 Mr-Ap'63. (MIRA 16:9)

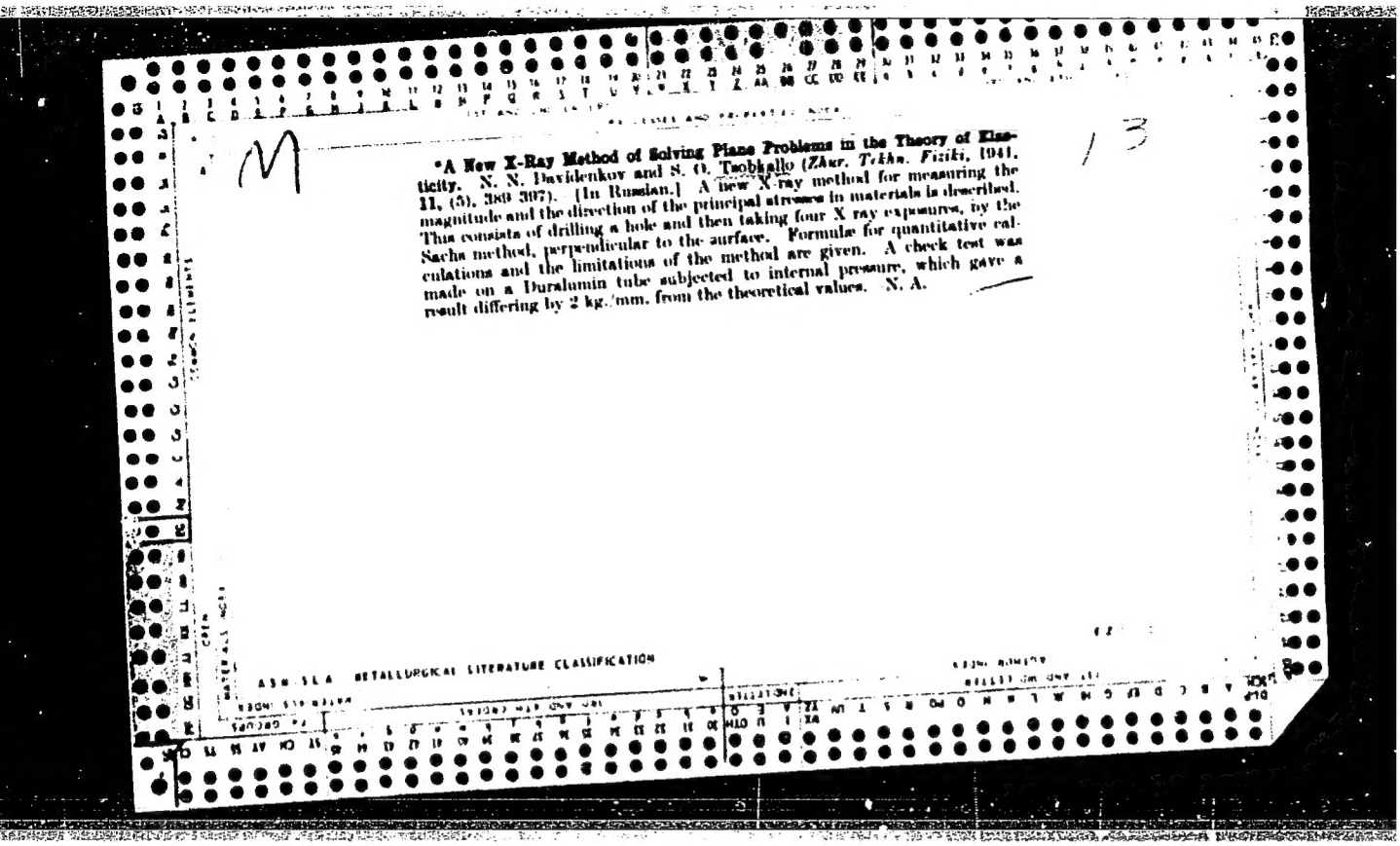
1.Laboratory of Pharmacology of the Central Nervous System, Pavlov Institute of Physiology, U.S.S.R, Academy of Sciences, Koltushi.
(BENZOIC ACID--PHUSIOLOGICAL EFFECT) (NOVOCAINE)
(SULFANILAMIDE) (CONDITIONED RESPONSE)

KUCHERENKO, T.M.; [illegible]OFRONOV, N.S.; TSOBKALLO, G.I.

Effect of apophyllol on the conditioned reflex activity. Nauch. soob. Inst.fiziol. AN SSSR no.3:91-94 '55.

(MIRA 13:5)

1. Laboratoriya neyrofarmakologii (zav. - G.I.Tsobkallo) Instituta fiziologii imeni Pavlova AN SSSR.



***A New X-Ray Method of Solving Plane Problems in the Theory of Elasticity.** N. N. Davidenkov and S. O. Tsobkallo (*Zhur. Tekh. Fiziki*, 1941, 11, (5), 389-397). [In Russian.] A new X-ray method for measuring the magnitude and the direction of the principal stresses in materials is described. This consists of drilling a hole and then taking four X ray exposures, by the Sachs method, perpendicular to the surface. Formulæ for quantitative calculations and the limitations of the method are given. A check test was made on a Duralumin tube subjected to internal pressure, which gave a result differing by 2 kg./mm. from the theoretical values. N. A.

Applied Mechanics Review

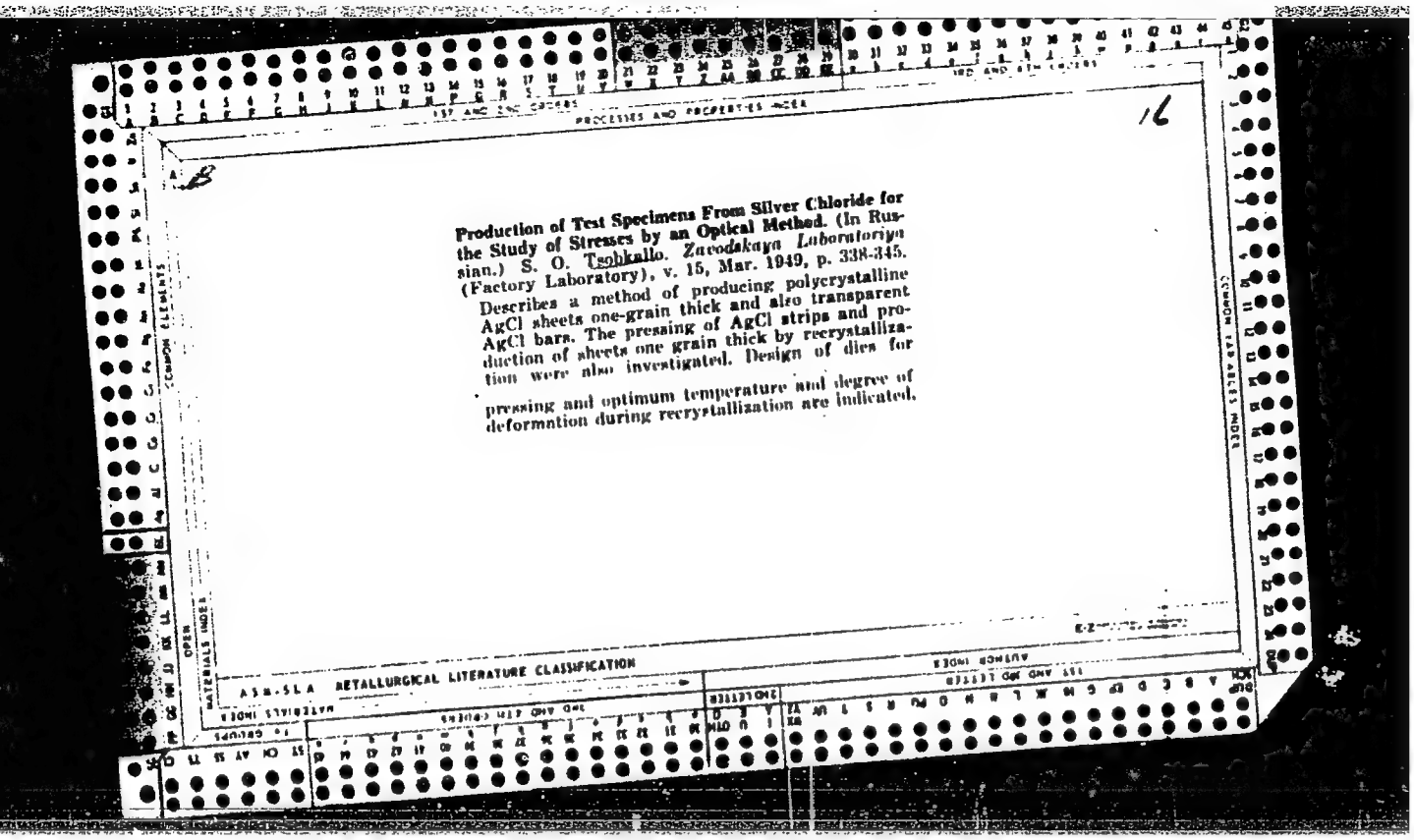
Experimental Stress Analysis

854. S. O. Tsobkallo and D. M. Vasiliev, Residual-stress measurement by excision of small cylinders (in Russian), Zavodskaya Lab. 15, 199–207 (Feb. 1949).

A method is described of measuring residual surface stresses in large pieces. By means of a machined circular slot a cylindrical portion is isolated from the material but remains undetached at its base. Residual stresses on the free, plane surface of the cylinder are measured by cementing electric-resistance gages to the surface before cutting, and measuring the strains produced by the cut. The authors attempt to establish the required ratio of depth of cut to diameter of cylinder such that the stresses acting on the uncut base of the cylinder will not significantly influence the measured strains. To treat the problem analytically, they introduce rather far-reaching simplifications in replacing the actual situation by a solid infinite cylinder, part of whose surface is acted upon by uniform, radial pressure. They find that at a distance from the loaded portion equal to about half the diameter, the radial strain is about 1% of the maximum radial strain in the loaded portion, a result which is hardly surprising in view of Saint Venant's principle. They conclude, by implicit analogy, that a depth of cut equal to the diameter is more than sufficient to insure undisturbed surface strains. A test is described to verify this contention. However, in the test two long straight slots were used to isolate the test portion, rather than the cylindrical slot for which the analysis was made. Difficulties are described of obtaining reliable strain measurements over a sufficient length of time (zero-shift), this error, for 100 hr, accounted to 2% when bakelite cement heated to 70 C for 20 hr was used, and to 13% for both bakelite and celluloid-acetone cements dried at room temperature. It is maintained that if X-ray stress measurements were made instead, a cylinder diameter of 1 mm would suffice, but problems of accuracy of this method are not discussed.

George Winter, IHA

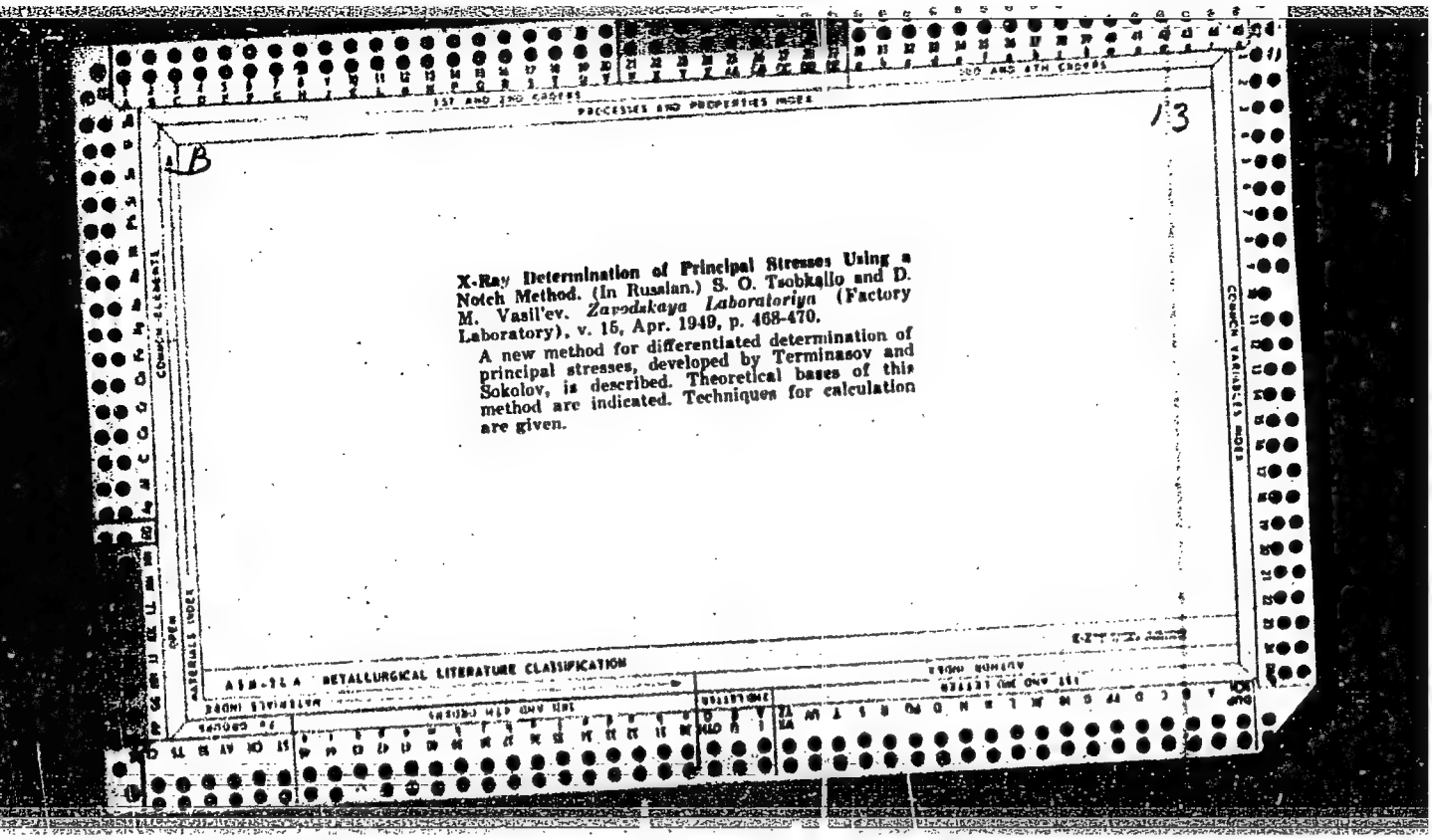
1950



16

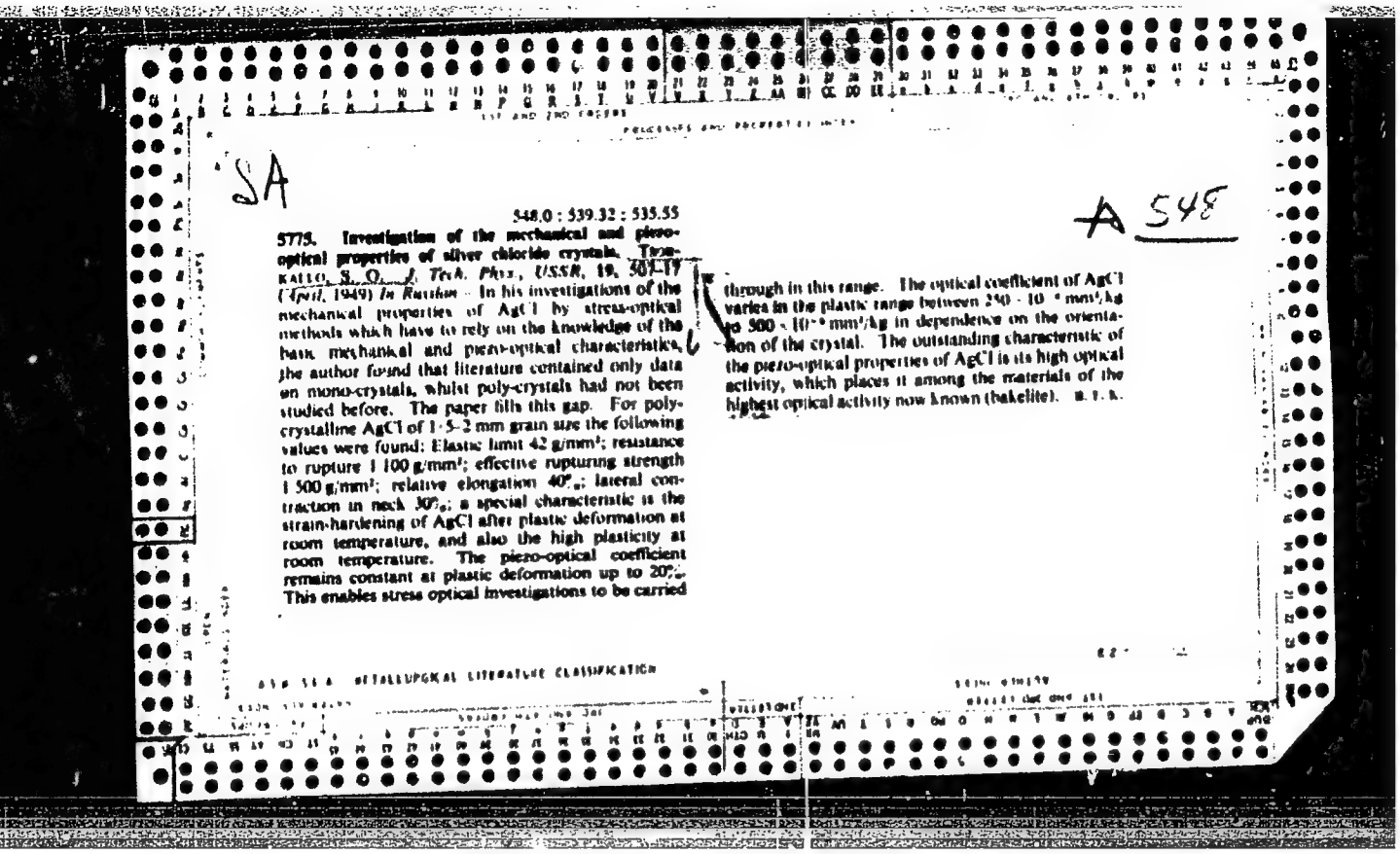
Production of Test Specimens From Silver Chloride for the Study of Stresses by an Optical Method. (In Russian.) S. O. Tsobkallo. *Zavodskaya Laboratoriya* (Factory Laboratory), v. 15, Mar. 1949, p. 338-345.

Describes a method of producing polycrystalline AgCl sheets one-grain thick and also transparent AgCl bars. The pressing of AgCl strips and production of sheets one grain thick by recrystallization were also investigated. Design of dies for pressing and optimum temperature and degree of deformation during recrystallization are indicated.



X-Ray Determination of Principal Stresses Using a Notch Method. (In Russian.) S. O. Tsobkallo and D. M. Vasil'ev. *Zavodskaya Laboratoriya* (Factory Laboratory), v. 15, Apr. 1949, p. 468-470.

A new method for differentiated determination of principal stresses, developed by Terminasov and Sokolov, is described. Theoretical bases of this method are indicated. Techniques for calculation are given.



SA

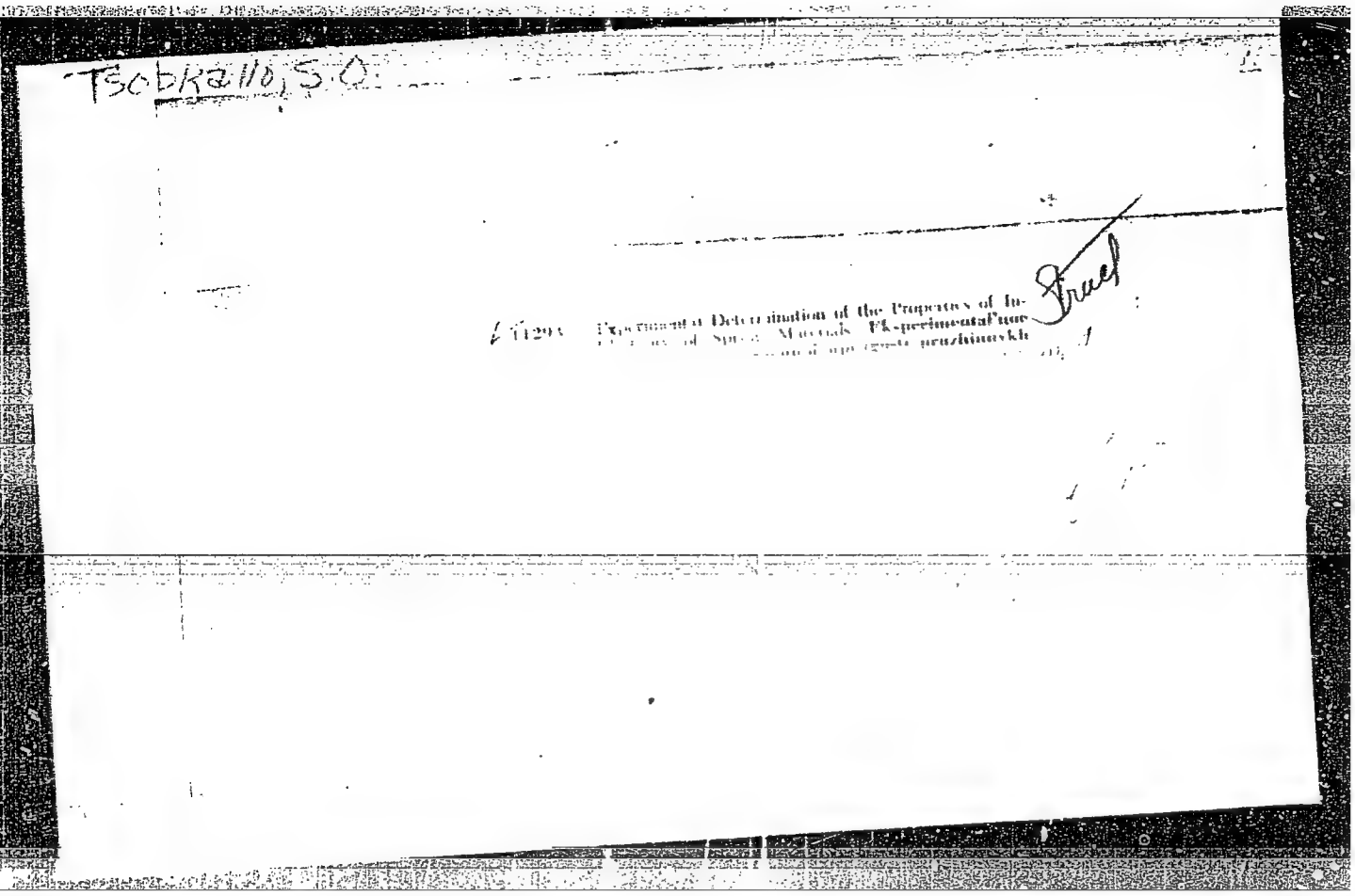
A 548

548.0 : 539.32 : 535.55

5775. Investigation of the mechanical and piezo-optical properties of silver chloride crystals. TYAPKALO, S. O. *J. Tech. Phys., USSR*, 19, 501–17 (*April*, 1949) *In Russian* — In his investigations of the mechanical properties of AgCl by stress-optical methods which have to rely on the knowledge of the basic mechanical and piezo-optical characteristics, the author found that literature contained only data on mono-crystals, whilst poly-crystals had not been studied before. The paper fills this gap. For poly-crystalline AgCl of 1·5–2 mm grain size the following values were found: Elastic limit 42 g/mm²; resistance to rupture 1 100 g/mm²; effective rupturing strength 1 500 g/mm²; relative elongation 40%; lateral contraction in neck 30%; a special characteristic is the strain-hardening of AgCl after plastic deformation at room temperature, and also the high plasticity at room temperature. The piezo-optical coefficient remains constant at plastic deformation up to 20%. This enables stress optical investigations to be carried through in this range. The optical coefficient of AgCl varies in the plastic range between $240 \cdot 10^{-8}$ mm²/kg to $500 \cdot 10^{-8}$ mm²/kg in dependence on the orientation of the crystal. The outstanding characteristic of the piezo-optical properties of AgCl is its high optical activity, which places it among the materials of the highest optical activity now known (bakelite). B. T. K.

TSOBKALLO, S.O., kandidat fiziko-matematicheskikh nauk; BALANDIN, Yu.F., inzhener.

Elasticity limit and elastic afteraffect of peened L62 brass sheet. TSvet.met.29 no.9:74-78 S '56. (MLRA 9:10)
(Brass--Hardening) (Elasticity)



TSOBKALLO, S. O.

USSR/Metals - Steel, Properties Jun 51

"Phenomenon of Plasticity in the Process of Brittle Failure of Steel," S. O. Tsobkallo, Leningrad Polytech Inst imeni M. I. Kalinin

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 6, pp 844-847

Establishes experimentally existence of plastic deformation in thin surface layer in zone of brittle breakdown of notched specimens made of 0.2% C steel and broken by pendulum impact testing machine at temp range from liquid oxygen temp to room temp. Using radiographic method of investigation, evaluates magnitude of this deformation

205T76

USSR/Metals - Steel, Properties (Contd) Jun 51

and its dependence on temp at moment of breaking. Submitted by Acad Ye. A. Chudakov.

205T76

TSOBKALLO, S. O.

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Electronic Phenomena and Spectra

X-ray analysis of the structure of aluminum and brass L-70 in the process of compression and recovery. S. O. Tsobkallo and V. V. Latsh' (M. I. Kalinin Polytech. Inst., Leningrad). *Izvest. Akad. Nauk S.S.S.R. Ser. Fiz.* 17, 373–80 (1953).—The samples of the compn. Al 99.07, Si 0.13, Cu 0.03, Fe 0.17% and brass Cu 70.09, Zn 28.95, Pb 0.96%, and Fe traces were formed into cylinders 25 mm. high and 15 mm. in diam. The Al compn. was fired for 3 hrs. at 250°, the brass at 400°. The Al compn. was flattened by 5, 11, 16, 35, 55, and 80%, the brass by 5, 9, 17, 20, 40, and 50%. Such samples were fired at different temps. for 1 hr. and also at const. temp. for different periods. Rockwell hardness was measured and x-ray pictures of Cu radiation were examd. for scattering of lines, indicating deformations of second and third kind. The intensity of the 511 line (Al) drops linearly as a function of the deformation. Both intensity and hardness recover by annealing for 1 hr. at temps. >160°. Intensity can be represented as a function of Rockwell hardness by a curve. In brass the width of line 420 increased linearly to 20% deformation; then the width remained const. to 40% and increased again above that. Upon annealing hardness increased to a max. at 230–240°, beyond which temp. rapid recovery set in. From isothermic annealing tests it is shown that deformations of the 3rd kind are not completely lifted by annealing in recrystd. parts. This increase in hardness in brass is attributed on the basis of microscopic observation of gliding planes to a chem. inhomogeneity leading to a sepn. of a β phase with higher Zn content. The results are discussed and the assertion is made that in pure metals hardening is due to deformations of the third kind, whereas in alloys hardening is due both to deformations of the lattice and to changes in phase structure.

S. Pakswer

USSR/Metallurgy - Fatigue Testing, Jan 53
Nature of Fatigue

"Studying the Nature of Fatigue by Optical Method," S. O. Tsobkallo, B. A. Kuznetsov

Zhur Tekh Fiz, Vol 23, No 1, pp 3-16

Uses specimens made of silver chloride and testing machine of special design for studying process of fatigue in metals. Discusses existing theories of fatigue failure and concludes that most correct theory is one based on assumption of gradual decrease in local strength ("loosening") with increasing number of load reversals.

270T88

FD 372

TSOBKALLO, S. O.
USSR/Physics - Oscillations in Metals

Card 1/1

Author : Tsobkallo, S. O. and Chelnokov, V. A.

Title : New method for determining true damping of oscillations in metals

Periodical : Zhur. tekh. fiz. 24, 499-510, Mar 1954

Abstract : Method, suggested by authors for measuring damping factor, is based on counting impulses with aid of binary conversion device. Use of small specimens is discussed. Authors develop theoretical method for determining true decrement of oscillations in bending and give examples of its application. Nine references, 7 USSR, one since 1934, one since 1938, others 1948-1953. Illustrations, graphs.

Institution :

Submitted : October 14, 1953

TSOBKALLO, S. O. FD 380
USSR/Physics - Oscillations in Metals

Card 1/1

Author : Tsobkallo, S. O.

Title : On the connection of the elastic after-effect with the attenuation of oscillations in metals

Periodical : Zhur. tekh. fiz. 24, 566-575, Mar 1954

Abstract : Develops a method for measuring attenuation of oscillations in sheet metal, using a pendulum with double elastic suspension. Studies attenuation in seven spring materials (tin, aluminum and beryllium bronzes), determining simultaneously the elastic after-effect and establishing relationship between two phenomena. Illustrations, diagrams.

Institution :

Submitted : October 14, 1953

PEGOVALO, V. G.

"Experimental Investigations on the Properties of Imperfect Elasticity of Spring Materials", p. 149, Fizika Metallov i Metallovedeniye, 2, No. 1, 1956.

24585 S/137/61/000/005/039/060
A006/A106

188200

AUTHOR: Tsobkallo, S. O.

TITLE: Elastic aftereffect of spring alloys

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 5, 1961, 31, abstract 5Zh237 (V sb. "Relaksats. yavleniya v metallakh i splavakh", Moscow, Metallurgizdat, 1960, 154-168)

TEXT: The author studied the effect of case hardness and heat treatment σ_e and the elastic aftereffect $\Delta\varepsilon$ during bending of various spring sheet materials (bronze, steel, etc.). He also determined the effect of temperature on the magnitude of σ_e and $\Delta\varepsilon$. σ_e and $\Delta\varepsilon$ were measured at room and higher temperatures on a ППУ (PPU) device of original design, whose schematic representation is given. The author presents graphs showing changes of σ_e and $\Delta\varepsilon$ under the effect of various physical and technological factors and discusses the nature of such changes. It is found that separate sections of aftereffect curves are described by different equations. In this connection it is assumed that the elastic aftereffect is determined by several relaxation processes occuring simultaneously, having different relaxation times. As a result of investigating

Card 1/2

Elastic aftereffect of spring alloys 24585 S/137/61/000/005/039/060
A006/A106

the temperature dependence of δ_e' of some tin and beryllium bronzes, the author establishes the diffusional nature of proportional flow and assumes the effect of the mechanism of slow diffusion of dislocations, surrounded by additional atoms. There are 21 references.

A. B.

[Abstracter's note: Complete translation]

Card 2/2

PHASE I BOOK EXPLOITATION SOV/5305

Moscow. Institut stali

Relaksatsionnyye yavleniya v metallakh i splavakh; trudy Mezhvuzovskogo soveshchaniya (Relaxation Phenomena in Metals and Alloys; Transactions of the Inter-Institute Conference) Moscow, Metallurgizdat, 1960. 326 p.

Sponsoring Agency: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya RSFSR and Moskovskiy institut stali imeni I.V. Stalina.

Ed. (Title page): B.N. Finkel'shteyn; Ed. of Publishing House: Ye.I. Levit; Tech. Ed.: A.I. Karasev.

PURPOSE: This collection of articles is intended for personnel in scientific institutions and schools of higher education and for physical metallurgists and physicists specializing in metals. It may also be useful to students of these fields.

COVERAGE: The collection contains results of experimental and theoretical investigations carried out by schools of higher education and scientific research institutions in the field of the relaxation phenomena in metals and alloys. Several articles are devoted to the investigation—by the internal-friction method—of the decomposition of supersaturated solid solutions. Also analyzed are the defects of the crystalline lattice, plastic deformations, high-temperature behavior of alloys, and creep. Problems of the relation between internal friction and temper brittleness, the use of the method of internal friction in the investigation of powder-metallurgy products, and the mechanism of impact fatigue are discussed. The collection also contains articles on the damping characteristics of materials, elastic after-effect, and the new slow-detection method. No personalities are mentioned. References follow most articles. There are 366 references: 192 Soviet and 174 non-Soviet.

TSOBKALLO, S.O.; GOLUBEV, N.A.

Influence of the thermal treatment on elastic aftereffects in elastic bronzes. Trudy LPI no.197:132-139 '58. (MIRA 13:3)
(Bronze) (Elasticity)

S/136/60/000/04/018/025
E091/E235

AUTHORS: Tsobkallo, S. O., Candidate of Physical and Mathematical Sciences and Vashchenko, Z. A., Engineer

TITLE: Influence of Dispersion Hardening on the Elastic Limit and the Elastic Afterworking of the Spring Alloy Kunial' B

PERIODICAL: Tsvetnyye metally, 1960, Nr 4, pp 71-76 (USSR)

ABSTRACT: In this work, a Kunial' B alloy containing 91.96% Cu, 5.88% Ni, 1.54% Al and 0.28% Fe, was studied. Strip of approximately 0.5 mm thickness was made from this alloy which was rolled with 2 different reductions (33 and 85%) in order to study the influence of cold working. Prior to rolling, the alloy was quenched in water from 750°C. Subsequently, the specimens made from the strip were subjected to annealing at temperatures in the range of 400 to 600°C. In this work, 2 main groups of properties of the alloy were studied which depend on: 1) the imperfect elasticity and the resistance of the material to small plastic deformations; 2) the resistance to large plastic deformations (ultimate strength σ_B, elongation on failure δ and microhardness H_p at a

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S/136/60/000/04/018/025
E091/E235

Influence of Dispersion Hardening on the Elastic Limit and the Elastic Afterworking of the Spring Alloy Kunial' B

load of 100 g). The investigations were carried out on 150 x 20 mm rectangular strip specimens from which specimens for tensile testing were also cut. The imperfect elasticity and the resistance to small plastic deformations formed the main group of properties investigated in this work; these were represented by the limit of elasticity, taking into consideration their dependence on the time of application of the force (Ref 1), and also by direct and reverse elastic after effect characterised by a few criteria. The measurement of these values was carried out in bending by a new method, based on measurements of flow deformation at a given constant total deformation of the specimen (Ref 2). The modulus of normal elasticity, the knowledge of which is required for stress calculations, was measured by a new ultrasonic method (Ref 3). The values of the modulus were found to be (1.37 to 1.34) 10^4 kg/mm^2 for the original work-hardened materials and were (1.38 to 1.42) 10^4 kg/mm^2 for annealed specimens. The Poisson coefficient for the materials was taken as 0.36. The

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S/136/60/000/04/018/025
E091/E235

Influence of Dispersion Hardening on the Elastic Limit and the Elastic Afterworking of the Spring Alloy Kunial' B

elastic limits of the materials investigated were determined from elastic limit curves (see Fig 1) which had been worked out earlier by one of the authors (Ref 1). To plot these curves, a series of identical specimens were subjected to various stresses for 10 minutes. After removal of the load, the residual deformation was measured for each specimen. The dependence of this deformation $\Delta\varepsilon_{10}$ on the stress σ gives the ten-minute elastic limit curve. Having selected the appropriate limit for the residual deformation (in this work these limits were taken as 0.001, 0.003, 0.005 and 0.01%), the required limit of elasticity, as well as the proportional elastic limit (limit of proportionality ?) σ_{pg}, the value of which corresponds to the end of the linear portion of the elastic limit curve (Table 1), can be determined from these curves. The greatest attention was paid in this work to the influence of the dispersion hardening on the above properties. To this end, elasticity limit

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S/136/60/000/04/018/025
E091/E235

Influence of Dispersion Hardening on the Elastic Limit and the Elastic Afterworking of the Spring Alloy Kunial' B

curves were plotted after annealing the alloy at various temperatures, for materials having undergone reductions of 33 and 85%. On the basis of these experiments, the relationship between elastic limits with an average tolerance of 0.003% residual deformation and annealing time t_o (Fig 2) were plotted. Series of elastic limit curves were obtained from groups of specimens having been annealed at various temperatures (see Fig 1), which enabled the dependence of elastic limits with various deformation tolerances on annealing temperature to be constructed (Fig 3) and the optimum temperatures to be finally established. Curves of direct and reverse after effect (Figs 4 and 5 respectively), were plotted in order to study the elastic after effect in relation to the condition of the material. Table 2 shows the criteria of the elastic after effect for the Kunial' B alloy in the work-hardened condition after quenching and after subsequent annealing treatments. During the

Card 4/6 annealing treatment, the changes of the mechanical

S/136/60/000/04/018/025
E091/E235

Influence of Dispersion Hardening on the Elastic Limit and the Elastic Afterworking of the Spring Alloy Kunial' B

properties and the microhardness were investigated (see Fig 6). The authors arrive at the following conclusions: 1) Dispersion hardening increases the elastic limit and reduces the elastic after effect of the Kunial' B alloy. 2) The optimum annealing temperature for ensuring the best imperfect elasticity properties (elastic limit and elastic afterworking) is 450 to 500°C with an annealing time of 4 to 2 hours for Kunial' B alloys which were work-hardened with reductions of 33 to 85% after quenching. 3) Within the range of 33 to 85% reduction, an increase in work-hardening prior to tempering increases somewhat the elasticity limit and the imperfect elasticity properties. 4) For estimating the resistance to large plastic deformation of thin sheet spring materials, it is expedient to use microhardness testing with relatively large loads (100 g). Such measurements are considerably simpler than currently used tests to failure

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S/136/60/000/04/018/025
E091/E235

Influence of Dispersion Hardening on the Elastic Limit and the Elastic Afterworking of the Spring Alloy Kunial' B

and determination of the ultimate strength and elongation. There are 6 figures, 2 tables and 5 references, 4 of which are Soviet and 1 English.

Card 6/6

TSOBKALLO, S.O.; BALANDIN, Yu.F.

Effect of peening and low-temperature annealing on the elastic limit and elastic aftereffect in nonferrous spring alloys. Trudy LPI no.202:79-86 '59. (MIRA 12:12)
(Nonferrous alloys--Testing) (Elasticity)

TSOHKALLO, S.O.; BALANDIN, Yu.F.

Studying the elastic limit and the elastic aftereffect in steel spring strips. Trudy LPI no.202:68-78 '59. (MIRA 12:12)
(Elasticity) (Springs (Mechanism))

ISOTKALLO, S.O.

Leningrad. Politekhnicheskiy institut imeni M. I. Kalinina

Metallovedeniye (Physical Metallurgy) Moscow, Mashgiz, 1959. 107 p. (Series: Its: Trudy, vyp. 202) 2,300 copies printed.

Sponsoring Agency: Ministerstvo vysshego obrazovaniya SSSR.

Eds.: V. S. Salmov, Doctor of Technical Sciences, Professor; Ed.: O. A. Kashchenko, Professor; Tech. Ed.: L. V. Shabalinina; Managing Ed. for Literature on the Design and Operation of Machinery (Leningrad Division, Mashgiz): F. I. Fetisov, Engineer.

PURPOSE: This collection of articles is intended for engineers, technicians, and research workers in the fields of physical metallurgy and the heat treatment of metals.

COVERAGE: The papers in this collection contain the results of experimental work dealing with the study of constitution diagrams of metal systems, the nature of solid solutions, aging of complex alloys, processes occuring during the heating and cooling of alloys, and the thermochemical treatment of steel.

Card 1/6

7

TSOBKALLO, S.O.; VASHCHENKO, Z.A.

Better parameters for copper-smelting reverberating furnaces with arched crowns. Izv. vys. ucheb. zav.; tsvet. met. 2 no.3: 99-100 '59. (MIRA 12:9)

1.Leningradskiy politekhnicheskiy institut, Kafedra fizicheskogo metallovedeniya.

(Smelting furnaces)

TSOBKALLO, S.O.; VASHCHENKO, Z.A.

Comparative study of the elastic limit and the elastic aftereffect of phosphor bronze springs. Izv. vys. ucheb. zav.; tsvet. met. 2 no.3:101-107 '59. (MIRA 12:9)

1.Leningradskiy politekhnicheskiy institut, Kafedra fizicheskogo metallovedeniya.

(Bronze--Heat treatment) (Elasticity)

TSOBKALLO, S.O.; LIKHACHEVA, N.A.

Effect of annealing after peening on the elastic limit and the elastic after effect of spring tin-phosphorous bronze BrOF 6.5-0.15. Izv. vys. ucheb. zav.; fiz. no.1:44-53 '59.
(MIRA 12:8)

1. Leningradskiy politekhnicheskiy institut imeni M.I. Kalinina.
(Bronze—Testing)

TsOBKALLO, S.O.

24(6) PHASE I BOOK EXPLOITATION SOV/2385

Akademiya nauk SSSR

Nekotoryye problemy prochnosti tverdogo tela; sbornik statey (Some Problems in the Strength of Solids; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 386 p. Errata slip inserted. 2,000 copies printed.

Ed. of Publishing House: V. I. Aver'yanov; Tech. Ed.: R. S. Pevzner; Editorial Board: A.F. Ioffe, Academician; G. V. Kurdyumov, Academician; S. N. Zhurkov, Corresponding Member, USSR Academy of Sciences; B. P. Konstantinov, Corresponding Member, USSR Academy of Sciences; F. F. Vitman, Doctor of Physical and Mathematical Sciences, Professor (Resp. Ed.); L. A. Glikman, Doctor of Technical Sciences, Professor; N. A. Zlatin, Doctor of Physical and Mathematical Sciences; V. A. Stepanov, Doctor of Technical Sciences; Ya.B. Fridman, Doctor of Technical Sciences, Professor; B. S. Ioffe, Candidate of Technical Sciences (Deputy Resp. Ed.).

PURPOSE: This book is intended for construction engineers, technologists, physicists and other persons interested in the strength of materials.

COVERAGE: This collection of articles was compiled by the Otdeleniye fiziko-matematicheskikh nauk AN SSSR (Department of Physical and Mathematical Sciences) and the Fiziko-tekhnicheskiy institut AN SSSR (Institute of Applied Physics, Academy of Sciences, USSR) in commemoration of the 80th birthday of Nikolay Nikolayevich Davidenkov, Member of the Ukranian Academy of Sciences, founder and head of the Otdel prochnosti materialov (Department of the Strength of Materials) at the Institute of Applied Physics, Academy of Sciences, USSR, founder of the Fakul'tet fizicheskogo metallovedeniya (Department of Physical Metallurgy) at the Leningradskiy politekhnicheskiy institut (Leningrad Polytechnic Institute), recipient of the Stalin Prize (1943), the Order of the Red Banner of Labor (1945) and the Order of Lenin (1953). The articles deal with the strength of materials, phenomena of imperfect elasticity, temper brittleness, hydrogen embrittlement, cold brittleness, influence of deformation speed on the mechanical properties of materials, fatigue of metals, and general problems of the strength, plasticity, and mechanical properties of nonmetals. Numerous personalities are mentioned in the introductory profile of Professor Davidenkov. References are given at the end of each article.

2/3

24(6), 18(7)

AUTHORS: Tsobkallo, S.O., and Likhacheva, N.A.

SOV/139-59-1-7/34

TITLE: Effect of Annealing after Cold Working on the Elastic Limit and Elastic After-Effect of Phosphor Tin Spring Bronze BrOP 6.5 to 0.15 (Vliyaniye otzhiga posle naklepa na predel uprugosti i uprugoye posledeystviye prushinnoy olovyanno-fosforistoy bronzy BrOP 6.5 - 0.15)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1959, Nr 1, pp 44-53 (USSR)

ABSTRACT: The material (specification GOST 5017-49) was made in the form of a spring strip, 0.2 mm thick with three different reductions in area during rolling: (1) 32 - 35, (2) 49, and (3) 60%. The heat treatment of the material consisted in annealing the specimens at temperatures in the range 200 to 650 °C for one to four hours. The investigation of elastic after-effect and the measurement of the elastic limit were carried out by a new method (Refs 2, 3, 13) involving bending of specimens, 20 x 110 mm. The modulus of elasticity of the materials was measured by a new infra-sound method (Refs 9, 10, 11) and was found to be (1.13 - 1.17) 10^4 kg/mm^2 on transition from cold worked to fully annealed specimens. The elastic limit was measured in accordance with new ideas

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Effect of Annealing After Cold Working on the Elastic Limit and Elastic After-Effect of Phosphor Tin Spring Bronze BrOF 6,5 - .15

as to its dependence on the time of action of a force on a body (Refs 2, 3, 4). The maximum values for the elastic limits and their corresponding optimum annealing temperatures are shown in Table 1. The processes of direct and reverse elastic after-effect were studied at stresses close to the elastic limit. The materials used were those which in the annealed condition exhibited the greatest elastic limit (Fig 4). Besides, an investigation of these processes under identical stresses, but different treatment temperatures, was carried out. For a satisfactory quantitative estimation of the process of after-effect the following numerical characteristics should be introduced: (1) magnitude of deformation of direct elastic after-effect for ten minutes - $\Delta_{\varepsilon 10}$, in %; (2) difference between the magnitudes of direct elastic after-effect for two hours and for ten minutes - $m = \Delta_{\varepsilon 120} - \Delta_{\varepsilon 10}$%; (3) relationship between the deformation due to direct after-effect for two hours and that due to direct after-effect for ten minutes - $k = \Delta_{\varepsilon 120}/\Delta_{\varepsilon 10}$; (4) reverse after-effect for one hour -

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Effect of Annealing After Cold Working on the Elastic Limit and Elastic After-Effect of Phosphor Tin Spring Bronze BrOP 6.5 - 0.15

$\Delta\varepsilon_{obr60}$ %; (5) reversibility of the after-effect process $\alpha = \Delta\varepsilon_{obr60}/\Delta\varepsilon_{pr120}$ %. These values are called the criteria of elastic after-effect (see Table 2). In Fig 6 dependence of temporary resistance, elongation at fracture and micro-hardness on the temperature of one hour's annealing for BrOP 6.5 to 0.15, cold worked with different degrees of deformation in the original condition, is shown: (1) 32 - 35% (2) 49% (3) 60% deformation. The authors have arrived at the following conclusions. The elastic limit and the characteristics of incomplete elasticity of polycrystals are determined by the mobility of dislocations and by the path along which they can move. These processes differ from those which cause the characteristics of resistance to great plastic deformations (e.g. hardness), and hence the mechanical properties of spring materials must be estimated first of all according to the elastic limit and elastic after-effect. Annealing of cold worked metals can decrease the elastic after-effect by several times and increase the elastic limit. After annealing

Effect of Annealing After Cold Working on the Elastic Limit and lastic After-Effect of Phosphor Tin Spring Bronze BrOP 6.5 - 0.15

(relaxation) of cold worked alloys the role of the mechanism of proportional flow in direct elastic after-effect increases, and hence the size of the linear portion in the elastic limit curve becomes longer. The optimum conditions of heat treatment for the bronze BrOP 6.5 - 0.15 are annealing at 350 to 300 °C (depending on the degree of cold work) for one hour. Thereby the direct elastic after-effect decreases by up to five times and the elastic limit increases by 25 to 30%. Besides, the reversibility of elastic after-effect increases, although the absolute value of reverse elastic after-effect decreases. The scatter of the magnitudes of the imperfect elasticity characteristics decreases after annealing. There are many factors which oppose micro-plastic deformation in polycrystalline metals, and lead to a number of processes, having different action times, which bring about deformation by elastic after-effect which can be measured. For the estimation of the characteristics of resistance to great plastic

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Effect of Annealing After Cold Working on the Elastic Limit and Elastic After-Effect of Phosphor Tin Spring Bronze BrOP 6.5-0.15

deformations of thin sheet spring materials, it is appropriate to apply micro-hardness tests at relatively great loads (100 g). Such measurements are considerably simpler than those usually applied for testing to fracture, in which temporary resistance and elongation is measured.

Card 5/5 There are 6 figures, 2 tables and 46 references, 29 of which are Soviet, 12 English, 2 German and 3 translations.

ASSOCIATION: Leningradskiy Politekhnicheskiy Institut imeni M.I. Kalinina (Leningrad Polytechnical Institute imeni M.I. Kalinin)

SUBMITTED: August 28, 1958

SOV/124-58-8-9343

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 8, p 137 (USSR)

AUTHOR: Tsobkallo, S.O.

TITLE: A Study of the Properties of the Imperfect Elasticity of Spring Materials (Izucheniye svoystv nesovershennoy uprugosti pruzhinnykh materialov)

PERIODICAL: V sb.: Vopr. proyektir., izgotovleniya i sluzhby pruzhin. Moscow-Leningrad, Mashgiz, 1956, pp 230-253

ABSTRACT: An account is given of a method for studying the immediate elastic aftereffect in spring materials. The method is based on subjecting a test specimen to repeated stress removals (it being assumed that periodic stress removals of short duration do not affect the course of the process). The use of this method is most effective when the experiments are conducted with a prescribed constant strain. For such a contingency the author has created instruments for measuring the elastic aftereffect in sheet materials subjected to flexure and in wire subjected to torsion. In measurements undertaken to ascertain the nominal elastic limit it is found that the duration of exposure to stress does have an effect on the respective value of that limit. For

Card 1/2

SOV/124-58-8-9343

A Study of the Properties of the Imperfect Elasticity of Spring Materials

this reason the author proposes that the nominal elastic limits be determined on the basis of the relationship existing between the residual deformation and the stresses; this relationship is actually determined on several specimens which had been subjected to stress for identical lengths of time. Proposed as criteria are: 1) The elastic limit as ascertained upon exposure to stress for 10 minutes, and 2) the numerical value of the ratio of the immediate-aftereffect deformation during a relatively long period of time (several hours) to the deformation obtaining at the actual time of determination of the elastic limit. When the numerical value of this ratio is small, while the elastic limit is high, the spring material in question is considered to be of good quality. It is established that spring materials (e.g., chrome-silicon steel EI142 and tin-phosphorus bronze), when subjected to stress at normal temperatures, are characterized by yielding phenomena. It is found that when specimens are repeatedly subjected to stress and stress removal their elastic aftereffect may diminish by 70-80 percent. It is shown that cold hardening and low-temperature annealing will reduce the elastic aftereffect in tin-phosphorus bronze.

M.Ya. Shashin

Card 2/2

SOV/115-58-1-14/50

AUTHORS: Tsobkallo, S.O., Slavskiy, G.N., and Chetyrkina, N.A.

TITLE: A New Device for Measuring the Modulus of Elasticity of Sheet Materials (Novyy pribor dlya izmereniya modulya uprugosti listovykh materialov)

PERIODICAL: Izmeritel'naya tekhnika, 1958, Nr 1, pp 24 - 27 (USSR)

ABSTRACT: The article describes a new device (developed by the authors) for measuring the modulus of elasticity under high temperatures of highly flexible sheet materials of 0.1 to 0.8 mm thickness such as are used for instrument parts like membranes or flat springs. The device comprises an electric oven for heating the specimens, a photoelectric pickup, an electronic computing device and a cathode oscillograph. It automatically measures the damping infra-sonic oscillations of a specimen held in the electric oven. The relative measurement error of the device is between 0.5 and 1%; the ratio E_t/E_o (the elasticity modulus at normal temperature to the elasticity modulus at high temperature) was determined with an error of below 1%. N.N. Davidenkov gave consultations in the

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A New Device for Measuring the Modulus of Elasticity of Sheet Materials

process of the author's work. Z.A. Vashchenko, V.N. Sizov, V.A. Chelnokov and O.K. Shablinskaya assisted in manufacturing and operating the device. There are 2 diagrams, 1 photograph and 7 Soviet references.

1. Materials--Inspection 2. Elasticity--Measurement
3. Laboratory equipment--Operation

Card 2/2

TSOBKALLO, S. O.

"The Resilient Reaction of Spring Alloys

(various physical and technological effects on it and the methods of its measurement)

report presented at the Inter-vuz Conf. on Relaxation Phenomena in Pure Metals and Alloys, 2-4 Apr 58, at Moscow Inst. of Steels.

Vest. Vyssh Shkoly, 9, 72-3, 1958
(Piguzov, Yu. V.)

(Leningrad Polytechnical Inst)

TSOBKALLO, S.O.; SLAVSKIY, G.N.; CHETYRKINA, N.A.

New instrument for measuring elastic limit for sheet materials.
Izm. tekh. no.1:24-27 Ja-F '58. (MIRA 11:2)
(Measuring instruments)

AUTHORS: Tsobkallo, S.O., Vashchenko, Z.A. 32-1-29/55

TITLE: A Comparison of the Method of Static Stress and the Infrasonic Method in the Determination of Young's Modulus of Foil Material (Sravneniye metodov statícheskogo nagruzheniya i infrazvukovogo dlya opredeleniya modulya uprugosti listovykh materialov).

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 1, pp. 68-70 (USSR)

ABSTRACT: In the introduction it is said that such determinations are of great importance for the industry, but that, as yet, this kind of work has found too little application in Soviet works laboratories. In the description of the method of static stress it is mentioned that in this case the device developed by Müller [Ref. 4] is used according to the drawing attached, and that computation of the modulus is carried out in accordance with the generally known formula. The infrasonic method is used also in the case of the application of a special device which is here shown in form of a graph. This device is described as follows: A strip of the material to be tested is clamped fast at one end. The other end is caused to oscillate. The device, together with the sample, is in

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a furnace. The very slow oscillations of the sample are recorded by the known photoelectric indicator developed by Tsobkallo [Ref. 6]. The principle of this indicator consists in the fact that the oscillating part of the sample is introduced into the field of a light source, so that the shadows caused by the oscillations fall upon a photoelement, where they are transformed into electric pulses, which are then measured electronically. On the strength of the examples given it is proved that the infrasonic method is more advantageous and more accurate than the method of static stress, and that it can be recommended as the only possible one for the determination of Young's modulus at high temperatures. There are 2 figures, 1 table, and 6 references, 5 of which are Slavic.

ASSOCIATION: Leningrad Polytechnic Institute (Leningradskiy politekhnicheskiy institut).

AVAILABLE: Library of Congress

TSOBKALLO, S.O.; SMIRNOV, B.I.

X-ray study of crystal lattice distortions in aluminum deformed at the temperature of boiling nitrogen. Zhur.tekh.fiz. 27 no.8:1912-1914 Ag '57. (MIRA 10:9)

1. Leningradskiy politekhnicheskiy institut imeni M.I.Kalinina.
(Aluminum) (Metallography)

TSOBKALLO, S.O.

AUTHOR Tsobkallo S.O., Smirnov B.I.

TITLE X-Ray Study of Distortions in Crystal Lattice of Aluminum Deformed at the Temperature of Boiling Nitrogen. 57-8-34/36
(Rentgenograficheskoye izucheniye iskazheniy v kristallicheskoy reshetke alyuminiya, deformirovannogo pri temperature kipeniya azota - Russian)

PERIODICAL Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 8, pp 1912 - 1914 (U.S.S.R.)

ABSTRACT The authors show that the strength of the samples deformed in liquid nitrogen increases linearly with the increase of the deformation ε for two temperatures. The intensity of x-ray lines I(exposed to air) decreased linearly with the increase of deformation and this took place quicker than in the case of deformation in liquid nitrogen. The intensity of line obtained in the case of deformation in liquid nitrogen increased with the time, however, without reaching the values of those samples that were deformed in the air. The widening of β-lines (unimportant as regards their magnitude) reaches a saturation in the case of a deformation of about 15 %. The results show that aluminum can, by means of deformation at low temperatures, be solidified to a greater extent than is otherwise the case. This effect is maintained for a long period also at room temperature. The unimportant widening of x-ray lines in aluminum depends on its low melting temperature as well as on the small elastic anisotropy of its crystal.
(1 illustration and 7 Slavic references).

Card 1/2

X-Ray Study of Distortions in Crystal Lattice of Aluminum Deformed at the Temperature of Boiling Nitrogen. 57-8-34/36

ASSOCIATION Leningrad Polytechnical Institute im. M. I. Kalinin.
(Leningradskiy politekhnicheskiy institut im.M.I.Kalinina)
SUBMITTED February 6, 1957
AVAILABLE Library of Congress
Card 2/2

TSOBKALLO, S.O.

"Experimental Determination of Imperfect Elasticity in Spring Materials. S. O. Tsobkallo (*Fizika Metallov i Metallovedenie*, 1956, 2, (1), 148–160).—[In Russian]. A critical review of the literature on the elastic after-effect, the elastic limit, and hysteresis with special ref. to materials used for springs. Several kinds of apparatus are described for elastic measurements in bending and torsion at various temp. Graphs show some of the phenomena observed. Many current methods of measuring the elastic limit are wrong because they do not take account of the elastic after-effect: the elastic limit must now be thought of as a relaxation characteristic depending on the time for which the deforming load is applied. 23 ref.—A. F. B.

Tsobkallo, S. O.

64. Tsobkallo, S. O., and Chelnokov, V. A., New method for the determination of true damping of oscillations in metals (in Russian), *Zh. tekh. Fiz.* 24, 3, 499-510, Mar. 1954.

Authors describe experimental method, in which number of cycles N is counted by a binary electronic computer between two given values of the amplitude, x_0 and x_N, in free-heading vibrations. Logarithmic decrement is found from formula $\delta = (\ln x_0 - \ln x_N)/N$. Ratio x_0/x_N may be chosen comparatively close to unity without great loss of accuracy.

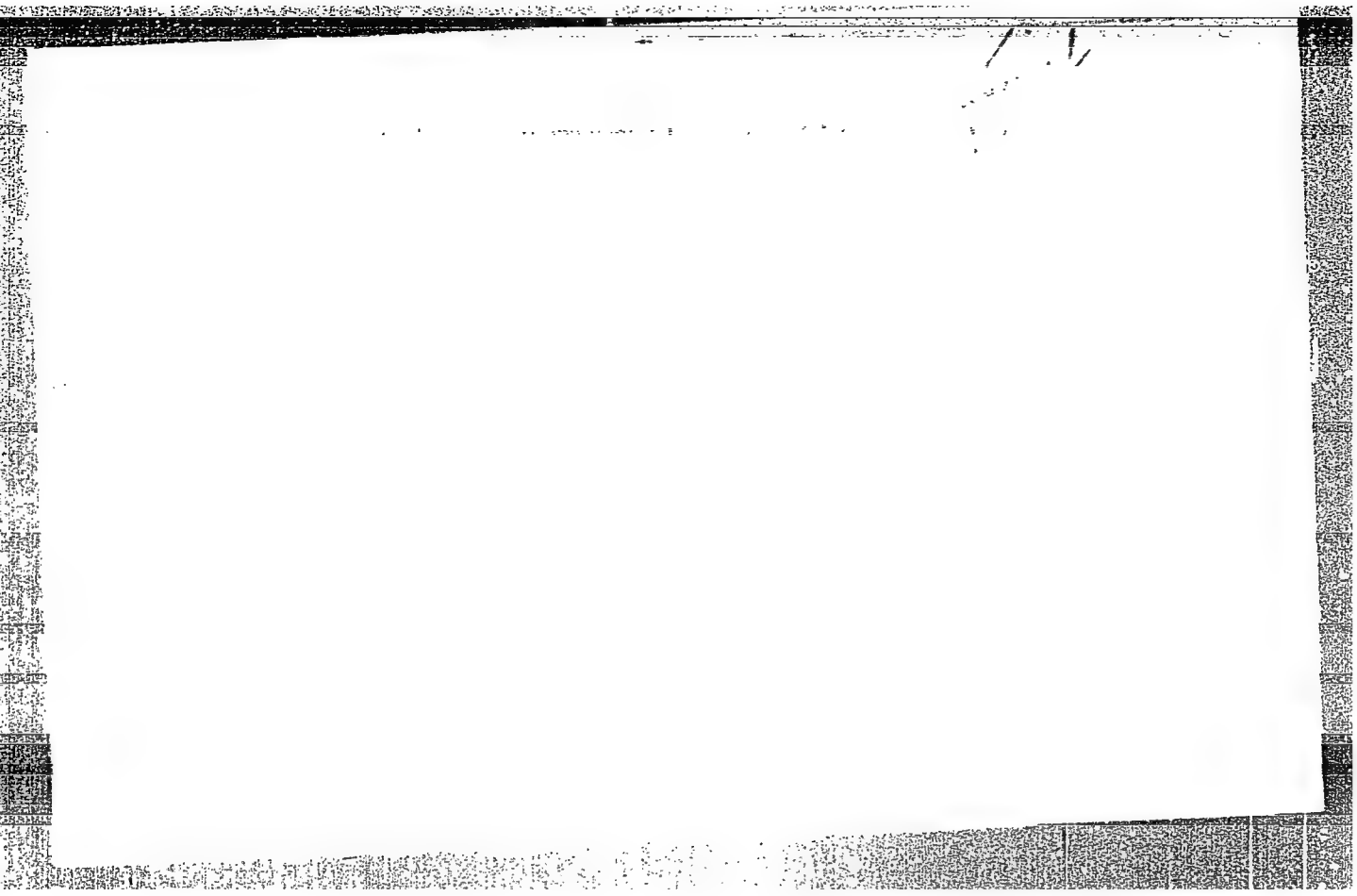
Experimentally found damping is a mean value for cross section. Authors show how to compute true damping, i.e., damping at a fixed stress level, from this mean value for rectangular and cylindrical specimens. Method is illustrated by experimental results for two different kinds of steel, with mean value and true damping as functions of stress. F. Niordson, Sweden

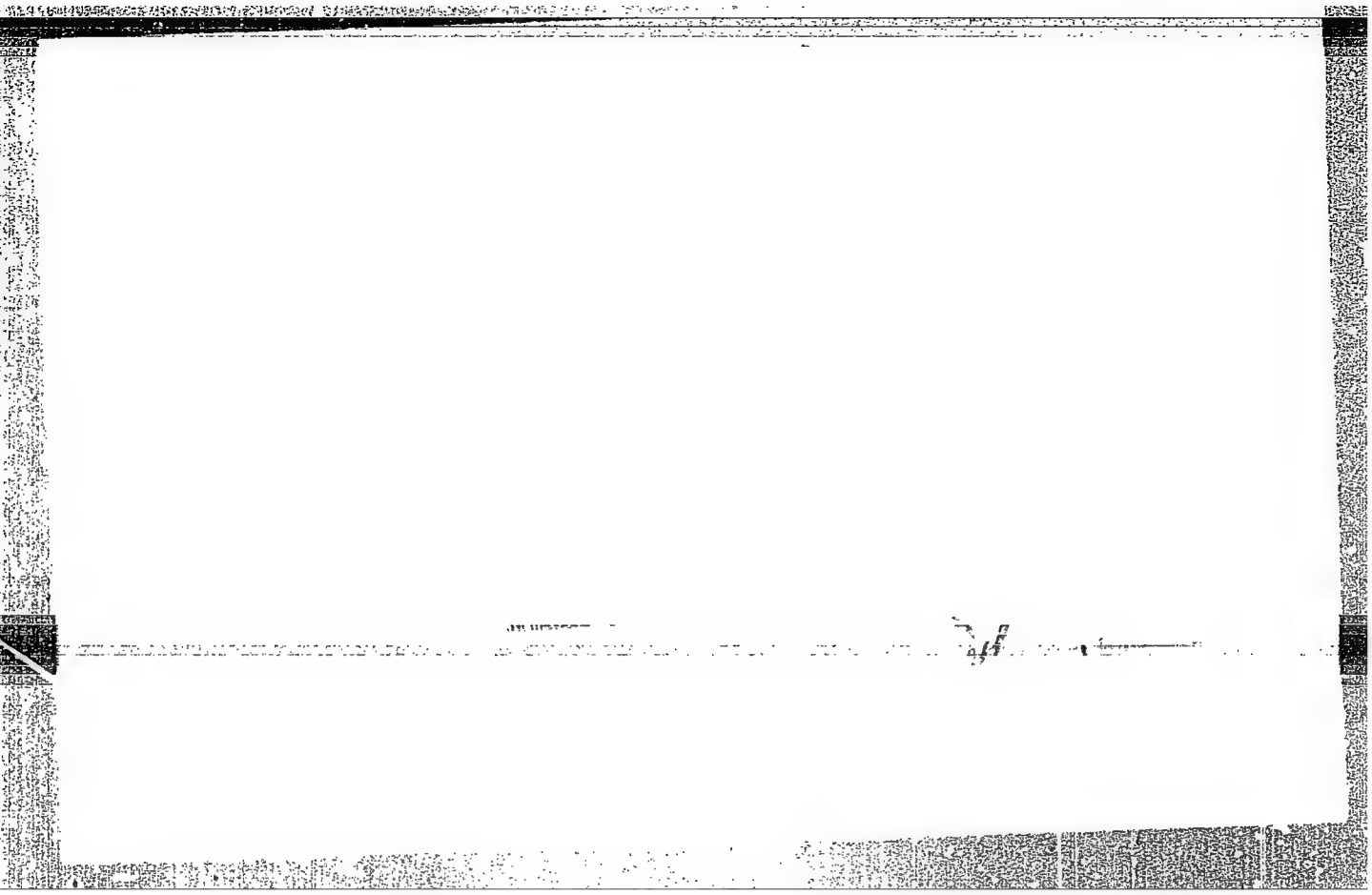
Tsobkallo, S. O.

3.

New x-ray cameras for investigations on the fine structure of polycrystalline material

1





TSOBKALLO, S.O.; BALANDIN, Yu.F.

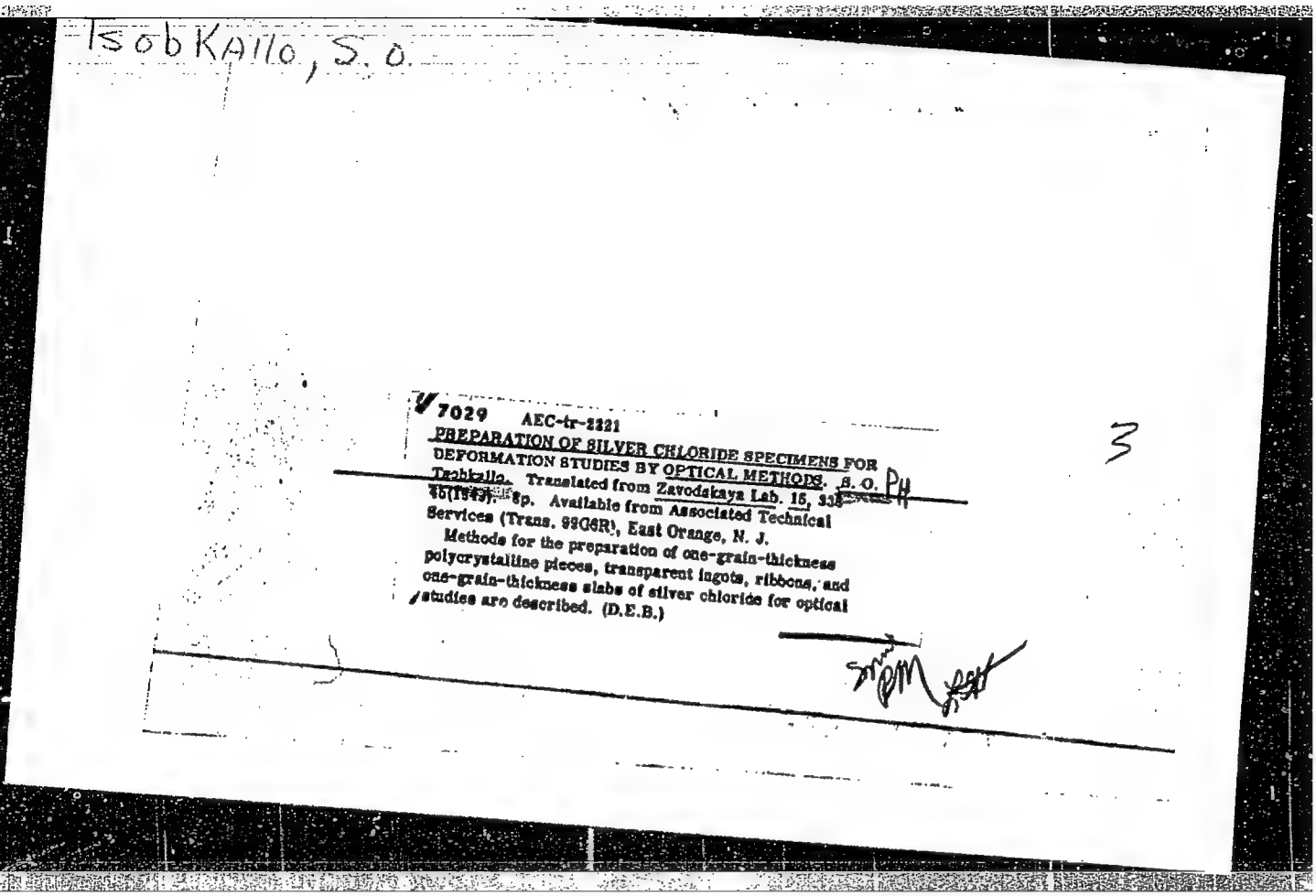
The new PPU-1 instrument for measuring elastic limits and after-effects in sheet materials. Izm.tekh.no.2:26-31 Mr-Ap '56. (Elasticity--Measurement) (Measuring instruments) (MLRA 9:7)

Other ways of compounding the dialkylaminoalkyl radical with phenothiazine by a method of condensing phenothiazine with substances having an active unsaturated system or with substances with an oxide radical are described. (U)

TSOBKALLO, S.O.

Experimental determination of the properties of incomplete elasticity of materials used for springs. Fiz.met.i metalloved. 2 no.1:149-159 '56. (MLRA 9:7)

1.Leningradskiy politekhnicheskiy institut imeni M.I.Kalinina.
(Springs (Mechanism)) (Elasticity)



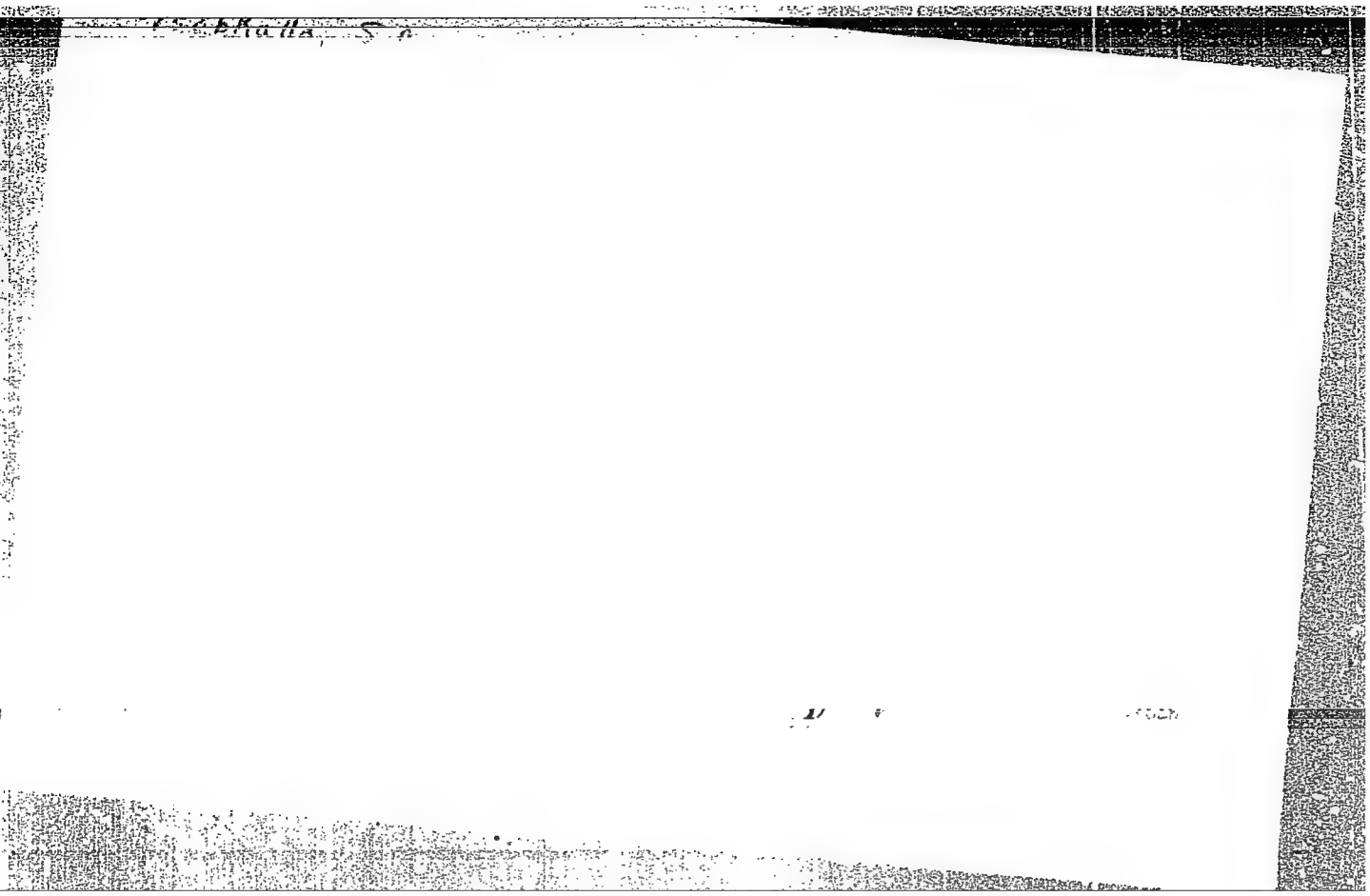
Sob Kailo, S. O.

7029 AEC-tr-2221

PREPARATION OF SILVER CHLORIDE SPECIMENS FOR DEFORMATION STUDIES BY OPTICAL METHODS. S. O. Trobitsila. Translated from Zavodskaya Lab. 15, 35[illegible] 45(1949). 8p. Available from Associated Technical Services (Trans. 9906R), East Orange, N. J.

Methods for the preparation of one-grain-thickness polycrystalline pieces, transparent ingots, ribbons, and one-grain-thickness slabs of silver chloride for optical studies are described. (D.E.B.)

3



Tsobkallo, S.O.

New x-ray cameras for investigations on the fine structure of polycrystalline material. S. O. Tsobkallo. *Zhur. Tekh. Fiz.* 26, 213-19(1956).—The 3 cameras described are especially designed for the study of fine structure (e.g. of metals subjected to plastic changes). Two of the cameras have in their cassettes, a semicircular film holder and are to be used with samples with plane (polished) surface in one case, and with wire-form material in the other. The 3rd camera has a film holder that is a fourth of a circle. All 3 cameras contain a built-in standard for measuring the intensity of the x-ray diffraction lines. V. H. Gottschalk

2006

TSOBKALLO, S.O.

New X-ray cameras for studying the fine structure of polycrystalline substances. Zhur.tekh. fiz. 26 no.1:213-219 Ja '56. (MLRA 9:6)
(Crystallography) (X rays--Apparatus and supplies)

TSOCHEV, At., inzh.

A new solution for the wall panels of the Al. Tolstoi-type residential large-paneled houses in Plovdiv. Stroitelstvo 11 no. 4:21-23 Jl-Ag '64.

TSOCHEV, M.

"Uncovering the reserves for economy of material in the IAntra State Industrial Enterprise, Gabrovo."

p. 26 (Leka Promishlenost) Vol. 6, no. 11, 1957. Sofia, Bulgaria

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, no. 5, May 1958

TSOCHEV, Minko; CHAUSHEVA, Elka; SPIROV, Blagoi; KEVORKIAN, Agop, inzh.; RASHEEV, Velcho, inzh.

Studies for determining correlation in the development of basic branches in textile indutry. Trud Inst tekstil prom 4:191-205 '63.

TSOCHEV, M., nauch. sutrudnik; DAMIANOV, G., inzh., dots.

Economic advantages in using certain systems of automatic looms with different comb width at the cotton weaving mills. Trud Inst tekstil prom 4:155-169 '63.

1. Machinery and Electrotechnical Institute (for Damianov).

TSOCHEV, M.; DIMKOV, B.

"Suggestion for correction change, and addition to the Bulgarian State standard "Drawings in Machine Construction."

p. 38 (Ratsionalizatsila) Vol. 7, no. 1, Jan. 1957
Sofiia, Bulgaria

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

TSOCHEV, Minko, nauchen sutrudnik

Economic effect of the introduction of the automatic IAntra-2 loom in comparsion with mechanical looms. Tekstilna prom 13 no.6:4-9 '64.

1. Scientific Research Institute of the Textile Industry, Sofia.

TSOCHEV, Minko; CHAUSHEVA, Elka; SPIROV, Blagoi; KEVORKIAN, Agop, inzh.; RASHEEV, Velcho, inzh.

Studies on the setting up of correlation between separate branches of textile industries up to 1890. Tekstilna prom 11 no.6:22 '62.

TSOCHEV, Minko, nauchen sutrudnik; ZHELEV, Zhivko, inzh.

Determining optimum revolutions of Chinese ring spinning frames for fine yarns. Tekstilna prom 12 no. 6: 2-4 '63.

1. Nauchnoizsledovatelski institut po tekstilna promishlenost (for Tsochev).
2. Gl. inzhener pri DIP "Bulgariia" (for Zhelev).

TSOCHEV, Minko; GEORGIEV, Georgi; ZLATANOV, Zdravko kandidat na ikonomicheskite nauki

"Specialization and Cooperation of the Cotton Textile Industry" by Minko Tsochev and Georgi Georgiev. Reviewed by Zlatanov Zdravko. Tekstilna prom 10 no.5:40 '61.

TSOCHEV, Petko; VASILEV, Vasil

Handcarts with mobile platform. Transp delo 6 no.8:44-45 '54.

1. LVZ "G. Dimitrov", Sofiia.

TSOCHEV, TS.

TECHNOLOGY

Periodical: KHIDROTEKHNIKA I MELIORATSII. Vol. 3, no. 5. 1958.

TSOCHEV, TS. Concerning the structure of the formula of Shezl's velocity coefficient.C. p. 161.

Monthly List of East European Accession (EEAI), LC., Vol. 8, no. 2, February 1959, Unclass.

10 1200

S/124/63/000/001/018/080
D234/D308

AUTHOR: Tsochev, Tsvyatko

TITLE: Additional scales of Δ and R for the table of roughness coefficients n of Pavlovskiy

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 1, 1963, 54, abstract 1B326 (Khidrol. i meteorologiya, no. 2, 1962, 15-22 (Bulg.: summaries in Rus. and Eng.))

TEXT: On the basis of the analysis of some experimental data and of Nikuradze's and Pavlovskiy's formulas for the Shezi coefficient, it is established that the roughness coefficient n depends on the absolute roughness of the walls Δ and on the hydraulic radius R. The dependence of the roughness coefficient on these parameters is plotted. 6 references.
[Abstracter's note: Complete translation]

Card 1/1

SUEV, Suiu; TSOCHEV, Tsv.; GURDANOV, T.

Studies on the natural biologic purification of sewage water.
Khidro i meteorolog 13 no. 3:28-42 '64.

TSOCHEV, TS.

Defects in the water supply of the cooperative farms and state farms. p. 32.
(KOOPERATIVNO ZEMEDELIE, No. 7, July 1957, Sofia, Bulgaria.)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 12, December 1957 Uncl.

KHADZIDEKOV, G., dots.; TSOCHEV, Ts.

Stimulating action of small doses of ionizing radiation upon vital processes. Priroda Bulg 10 no.6:13-16 '61.

1. Katedra po rentgenologiia i radiologiia pri ISUL.

TSOCHEV, Tsviatko

Additional scales for Δ and R to the table of the roughness coefficient "n" by Pavlovskiy. Khidro i meteorolog no.2:15-22 '62.

TSOCHEV, Ts. N.

Influence of the radioactive background on the health of man.
Priroda Bulg 11 no.5:24-29 S-O '62.

1. Nauchnoizsledovatelska radiologichna baza pri Ministerstvoto na narodnoto zdrave i sotsialnite grizhi.

SYYEV, S. [Suev, S.]; TSOCHEV, V. GYRDANOV, T. [Gurdanov, T.]; NENOV, St.

Studies on the utilization of the sewage of the city of Sofia for irrigation purposes. Zesz probl post nauk roln 47:65-76 '64

1. Central Scientific Research Institute of Hydroengineering and Soil Improvement, Bulgarian Academy of Sciences, Sofia.

IVANOV, D.; GOCHEV, V.; TSOCHEVA, L.

Baking of alkali syenite with calcium dichloride and calcium oxide for obtaining potassium chloride from syenite. Godishnik khim tekh 9 no. 3:101-109 '62 [publ. '63]

TYUKOV, A.I., red.; TSODIKOV, B.M., red.; PEVZNER, A.S., zav. red.; MEDVEDEV, L.Ya., tekhn. red.

[Cost manual for pipe installation work] TSennik na montazh oborudovaniia. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam. No. 12. [Piping and fittings] Truboprovody i armatura. 1958. 202 p. (MIRA 11:12)

1. Russia(1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.

(Pipe)
(Pipe fittings)

S/196/62/000/010/030/035
E194/E155

AUTHORS: Morgun, V.V., and Tsodikov, G.D.

TITLE: An electronic invertor for induction heating at a frequency of 10 - 30 kc/s

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.10, 1962,15, abstract 10 K81. (In the Symposium 'Vysokochastotn. elektrotermich. ustanovki' (High-frequency Electro-thermal installations), M.-L., Gosenergoizdat, 1961, 49-55).

TEXT: The operating principles of an electronic invertor are described, with a diagram of an experimental 60 kW invertor based on two tubes type GU-22A (GU-22A). Curves are given of current, voltage, power, efficiency and frequency as functions of time when heating cylindrical specimens of various diameters. The efficiency remains high if the duration of the transient process resulting from changes in the load parameters is much less than the steady-state time, which can be achieved when melting and in continuous-sequence heating in hardening and forging.

Card 1/1 [Abstractor's note: Complete translation.]

S/137/62/000/004/011/201
A006/A101

AUTHORS: Morgun, V. V., Tsodikov, G. D.

TITLE: A 10 - 30 kilocycle frequency electronic inverter for induction heating

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 8, abstract 4B49 (V sb. "Vysokochastotn. elektrotermich. ustanovki", Moscow-Leningrad, Gosenergoizdat, 1961, 49 - 55)

TEXT: The authors present the electric circuit and describe an experimental electronic inverter intended for induction heating instead of a valve generator, assembled according to a classical scheme. The main advantage of the electronic inverter over the valve device is its higher efficiency. There is, however, a drawback, appearing in operation on a load whose parameters change with time. Such a load is represented by a ferromagnetic part, preheated by the induction method with simultaneous heating. Changes in the part parameters during heating cause variations in the inverter conditions; this may entail a breakdown of the valves. Experiments on an electronic inverter model show that, to prevent this, the tran-

Card 1/2

S/137/62/000/004/011/201
A006/A101

A 10 - 30 kilocycle frequency...

sition operation (changes in the load parameters) should be considerably shorter than the stationary one (constant parameters). This can be achieved in melting and continuous consecutive heating for quenching or forging (continuous motion of the heated blanks). The operation of the electronic inverter on loads with variable parameters, requires thorough and extended checking under industrial conditions.

V. Kalitsev

[Abstracter's note: Complete translation]

Card 2/2

DZBANOVSKIY N.A.; TSODIKOV, V.V.; BORKHI, L.D.; KHLEBORODOVA, R.T.

Preparation of tetrabutyl ammonium hydroxide by the electrochemical method using ion-exchange membranes. Trudy IREA no.25: 427-433 '63. (MIRA 18:6)

KHOMUTOV, N.Ye.; TSODIKOV, V.V.

Effect of the electrode material on the electroreduction of quinoline. Elektrokhimiia 1 no.4:482-485 Ap '65.
(MIRA 18:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv.

AB[illegible]OV, Fedor Alek[illegible]; [illegible]KIY, Vitaliy Andreyevich,
IDEL'CHIK, Isaak Yevseyevich; KE[illegible], Igor' Oskarovich;
TSODIKOV, Veniamin Yakovlevich; KOMAROV, V.S., prof.,
doktor tekhn. nauk, retsenzent; GRISHAYENKO, M.I., ved.red.

[Aerodynamic resistance in mine workings and subway tunnels]
Aerodinamicheskoe soprotivlenie gornykh vyrabotok i tonneley
metropolitena. [By] F.A Abramov i dr. Moskva, Nedra, 1964.
185 p. (MIRA 18:1)

L 27248-66

ACC NR: AP6009861 SOURCE CODE: UR/0413/66/000/004/0053/0053

AUTHORS: Yudin, Ye. Ya.; Tsodikov, V. Ya.; Khusainova, O. M.; Yakobson, I. M.; Terekhin, A. S.; Butkin, B. I.; Chuchayev, V. G.

ORG: none

TITLE: Composite noise damper. Class 27, No. 178934

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 53

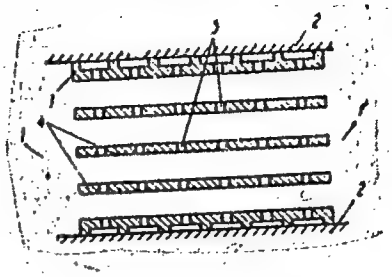
TOPIC TAGS: acoustic noise, sound absorption

ABSTRACT: This Author Certificate presents a composite noise damper for gas-dynamical equipment, engine exhaust channels, and ventilator shafts. The damper contains resonators placed along the side walls of the channel and sheets of sound absorbing material placed parallel to the resonators (see Fig. 1). To increase the damping efficiency and to decrease the consumption of the sound absorbing material, the sheets have open holes along their entire length for absorption of sound waves at both high and low frequencies.

Card 1/2 UDC: 62—758.34

L 27248-66
ACC NR: AP6009861

Fig. 1. 1 - exhaust channel; 2 - channel walls; 3 - resonators; 4 - sheets; 5 - open holes in sheets.



Orig. art. has: 1 diagram.

SUB CODE: 20, 13/ SUBM DATE: 01Feb65

Card 2/2

TSODIKOV, Yu.M. (Moskva)

Study of a wire generator. Avtom. i telem. 26 no.3.558-562 Mr '65. (MIRA 18:6)

L 17723-65

ACCESSION NR: AT4047768 S/0000/64/000/000/0337/0341

AUTHOR: [illegible]

TITLE: String sensors with a linear characteristic

SOURCE: [illegible] avtomaticheskikh sistem (Theory and application of automatic systems). Moscow, Izd-vo Nauka, 1964, 337-341

TOPIC TAGS: string sensor, string accelerometer, differential string sensor

ABSTRACT: Based on seven 1958-61 American and British sources, a short review of fundamentals and trends in the development of string sensors is presented. An experimental investigation is briefly reported of a linear-characteristic differential string sensor with a stabilized sum frequency developed in IAT under the direction of D. I. Ageykin along the lines set in the article "Accelerometer Space Guidance" (Space Aeronautics, 34, no. 4, 1960). The sensor comprises two strings in which vibrations are excited by oscillators 1 and 2 (see Fig. 1 of Enclosure). Voltages at frequencies f_1 and f_2 are applied to ring

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L 17723-65

ACCESSION NR: AT4047768

detector 3 which yields sum and difference frequencies. After amplifiers 4 and 5, the difference frequency appears at the output, while the sum frequency along with a reference frequency f_0 is fed to discriminator 6 of an AFC system. Further, the signal goes to l-f filter 7, amplifier 8, and final element 9. The sum-frequency stabilization eliminates nonlinearity and considerably enhances the accuracy of the instrument. On the other hand, it has been very difficult to provide a high sensitivity near zero measurand because both oscillators tend to synchronize through spurious mechanical and electrical couplings between them. Orig. art. has: 3 figures and 7 formulas.

ASSOCIATION: Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics, AN SSSR)

SUBMITTED: 06Jan64 ENCL: 01 SUB CODE: EC

NO REF SOV: 001 OTHER: 007

Card 2/3

L 17723-65

ACCESSION NR: AT4047768

ENCLOSURE: 01

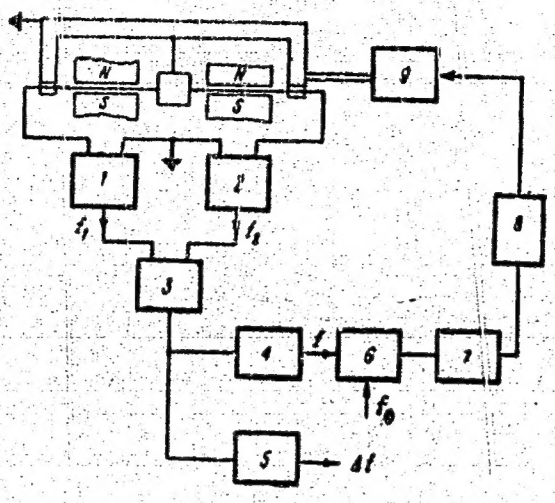

Fig. 1. A linear-characteristic string sensor for measuring force. Differential type with sum-frequency stabilization

Card 3/3

TSODIKOV, Yu.M. (Khar'kov)

Frequency to d.c. converter. Avtom.i telem. 23 no.4:532-535 Ap '62. (MIRA 15:4)
(Electric current coverters) (Frequency changers)

L 34861-66 EWT(d)/EEC(k)-2 BC
ACC NR: AP6009180 SOURCE CODE: UR/0146/65/008/005/0103/0109

AUTHOR: Tsodikov, Yu. M.

51
B

ORG: Institute of Automation and Telemechanics (Institut avtomatiki i telemekhaniki)

TITLE: Increasing the sensitivity of a string accelerometer

SOURCE: IVUZ. Priborostroyeniye, v. 8, no. 5, 1965, 103-109

TOPIC TAGS: accelerometer, inertial guidance, ACCELERATION MEASUREMENT

ABSTRACT: The dead band in a string accelerometer is considered (G. Pitman, "Inertial Guidance," 1962; I. M. Slater, Space Aeronautics, v. 34, no. 4, 1960). The conditions of minimum dead band are analyzed. The mutual synchronization of two string self-excited oscillators (constituting the accelerometer) is due to mechanical, electrical, and acoustic couplings between the strings. These

Card 1/2 UDC: 681.2